A new framework for implementing Monetary Policy in South Africa

Financial Markets Department

South African Reserve Bank

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Introduction

Since 1998, the South African Reserve Bank (SARB) has used a shortage or classical cash reserve system for implementing monetary policy. While this framework has functioned reasonably well for an extended period, it does have weaknesses, which have become more severe since the onset of COVID-19 and the special liquidity operations implemented at the time.

The SARB has, over the course of a number of years, been reviewing the monetary policy implementation framework (MPIF). Following a lengthy and detailed consultation process, it is now in a position to implement a new MPIF.

In November 2021, a consultation paper was published on the SARB website for public comment. This paper outlined a more modern 'tiered floor' framework for implementing monetary policy. The proposal has been revised in light of comments received, and the revised version has been approved by the Governors' Executive Committee (GEC)[1] to replace the shortage system.

This paper describes the new framework. It is accompanied by a separate paper which reviews the consultation period and details the transition plan to the new MPIF. This reform represents a technical change and does not alter the objectives of monetary policy, or the policy stance decided by the Monetary Policy Committee (MPC).

Table 1: Overview of the SARB's new MPIF

Type of framework	'Tiered floor'
Market liquidity position	Surplus
Main policy tool	A deposit facility paying interest on excess reserves, up to given quotas or tiers, at the policy rate, also called the repo (repurchase) rate, daily.

[1] The GEC is responsible for the day-to-day decision-making at the SARB. Its members are the Governor, the three Deputy Governors (including the Chief Executive Officer of the Prudential Authority), the Group Executive: Currency Management, the General Counsel and the Chief Operating Officer.

Type of framework	'Tiered floor'
Quotas/tiers	Based on banks' relative liabilities. Quotas are rounded up to whole numbers. Banks earn repo on any deposits up to their quota limits. There is no obligation to fill quotas.
Repo auctions	Available weekly. Funds are allocated using a fixed-quantity, fixed rate format (unchanged from the existing format, although the amount on offer will vary from the current R56 billion; the fixed rate is the repo rate).
Standing facilities	Available at the end of each day. Borrowing charged at repo *plus* 100 basis points; deposits remunerated at repo *less* 100 basis points. All qualifying deposits will earn repo.
Supplementary facilities	Offered at the end of the day, at the discretion of the SARB, at the repo rate. Such facilities will be offered in instances where the actual liquidity position deviates significantly from the planned liquidity position due to exogenous shocks (e.g. notes and coin movements).

Options for implementing monetary policy

No 'one size fits all'

Conventional monetary policy, as practised by the SARB and many other central banks, consists of setting the price of bank reserves. These reserves are a form of electronic money, issued by the central bank, and used by commercial banks both to make interbank payments and to meet reserve requirements. The central bank is the monopoly issuer of these reserves and exploits this power to determine their price.

There is no 'one size fits all' system for fixing the price of bank reserves, but most countries use one of two basic options. One is a scarce-reserves or mid-corridor system; the other is a surplus or floor system. Both systems have advantages and disadvantages, as detailed in the consultation paper. The right choice for any given country comes down to its individual circumstances.[2]

[2] C Borio, 'A hundred ways to skin a cat: comparing monetary policy operating procedures in the United States, Japan and the euro area', *Bank for International Settlements (BIS) Papers* No. 9, 2000, available at

In a scarce-reserves framework, the central bank provides only enough bank reserves so that the interest rate on those reserves is equal to the policy rate. If the central bank supplies too many reserves, their price is likely to fall away from the policy rate target; if the central bank provides too few, the price is likely to rise above it. Banks need reserves to satisfy reserve requirements and to make interbank payments. Inadequate reserves or missed payments have serious consequences and therefore banks that do not have sufficient reserves will be willing to pay high rates to procure the necessary liquidity. At the same time, excess reserves have little or no value, and therefore banks will not willingly hold them.

In a simple scarce-reserves system, this means that any over- or under-supply of reserves could either drop interbank rates to zero or force them to very high levels. In practice, central banks operating these systems typically provide borrowing and lending facilities available to banks at the end of each day. The end-of-day facilities limit volatility, ensuring that interbank rates do not exceed certain boundaries. Such facilities have to be priced at sufficient margins above and below the policy rate, so that banks are not incentivised to rely on them. These facilities therefore create a corridor around a policy rate (hence the mid-corridor systems).

By contrast, in a surplus- or ample-reserves framework, the central bank aims to saturate banks' demand for reserves. To prevent the excess supply of reserves from driving interest rates below the policy target, the central bank provides banks with a deposit facility which pays the policy rate. This deposit facility puts a floor under interbank rates, as banks are unlikely to lend reserves out below the rate they can earn at the central bank.

Tiered-floor systems, like the one adopted by the SARB, represent a compromise between the scarce-reserves and ample-reserves options. In a tiered floor, as in an ample-reserves system, the central bank provides enough reserves to satiate demand while paying interest on excess reserves at the policy rate. However, banks face certain limits (also called quotas or tiers) on the balances for which they can earn the policy rate. Any reserves over these limits qualify for a lower rate. This reproduces the incentive found in scarce-reserves systems for banks to dispose of some of their additional reserves by lending them to other banks. The advantage of this modification is that the system can function with a smaller and more stable

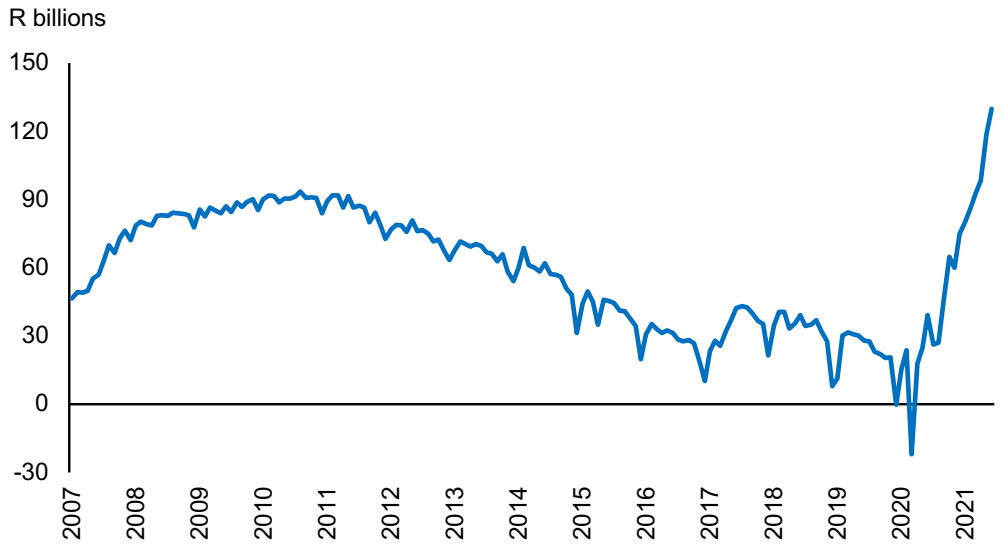
https://www.bis.org/publ/bppdf/bispap09a.pdf; D King and T Mancini-Griffoli, 'Chapter 5: Monetary operations', in *Advancing the Frontiers of Monetary Policy,* edited by T Adrian, D Laxton and M Obstfeld, 2018, p. 58; the SARB favours option 4 of this typology.

supply of liquidity than a ‘pure floor’ system. At the same time, the system can transmit policy decisions accurately with a larger supply of liquidity than would be viable in a scarce-reserves system.

Liquidity management with a structural surplus

In the South African case, there are several reasons to prefer a surplus-reserves system over the existing scarce-reserves system. The primary consideration is that, for an extended period, South Africa has had a structural surplus of bank reserves, meaning the SARB has been required to actively engineer scarcity to offset the effects of other policies, which were injecting liquidity. This structural surplus of bank reserves dates back to the 2000s and is mostly due to the accumulation of foreign exchange (FX) reserves.[3] Since the onset of COVID-19, it has become sharply larger given a range of new initiatives, including the Bond Purchase Programme, National Treasury’s (NT) permanent utilisation of a portion of its sterilisation deposit account at the SARB, the Loan Guarantee Scheme, and the absorption of foreign-currency inflows from international financial institutions into South Africa’s FX reserves.

Graph 1: Structural liquidity



[3] This reserve accumulation was supported by NT deposits at the SARB, which drained liquidity from the market. These NT Sterilisation Deposit Account balances were partially drawn down following the onset of the COVID-19 pandemic.

It is possible to operate a scarce-reserves framework in a surplus environment, but this requires an adequate liquidity-draining toolkit. Unfortunately, the SARB's toolkit for operating a shortage system suffered from declining effectiveness as the demands on it mounted – despite amendments in 2020 to enhance its efficiency.

In recent years, the SARB has seen minimal demand for debentures and none for reverse repos. Meanwhile, the market has been oversaturated with FX swaps; and the SARB has come to hold most of the Corporation for Public Deposits (CPD) funds on call. At the same time, the National Treasury Sterilisation Deposit Account has been drawn down, releasing liquidity back into the market.

In these circumstances, the SARB has faced the strategic risk of potentially not being able to establish an adequate shortage, without creating harmful side effects, in the event of a new liquidity shock. Large-scale draining operations have also been causing distortions in certain markets, as well as incurring excess costs. By contrast, the new tool of interest on excess reserves is expected to provide a more efficient technique for controlling rates, which would be more robust to surplus conditions and possible liquidity shocks.

Flexibility to adopt balance sheet policies

A surplus-reserves system also provides greater flexibility to implement balance sheet policies, if needed, for instance during periods of market dysfunction. This provides financial stability advantages, with better leeway to provide liquidity in a crisis without compromising monetary policy implementation. It also confers flexibility for other balance sheet policies that might be needed from time to time, including further accumulation of FX reserves.

The new framework is not intended to commit the SARB to operating with a larger balance sheet. Nonetheless, the SARB has demonstrated a preference to run a larger balance sheet than can be funded by autonomous factors (notes and coin plus required reserves), as demonstrated by the long-standing structural surplus of reserves noted above. The new MPIF provides a framework better suited to this preference.

Additional considerations

The new framework is also likely to function better in the context of a weaker interbank market. Scarce-reserves systems require efficient interbank lending to balance the short and long positions between banks. However, the South African interbank market has become less efficient, particularly over the past two years, due to a range of factors. Regulatory shifts, such as the large exposures framework, have disincentivised interbank exposures. The flow of funds between banks has been obstructed by risk limits – which were in some cases tighter following the sovereign rating downgrade to below investment grade – as well as technical frictions, including different square-off times for small and large banks, and a shift towards secured rather than unsecured interbank lending, with some participants adopting this new format ahead of others. Furthermore, surplus banks have seen reduced demand for funds given persistent over-funding at repo auctions, with banks borrowing more reserves than needed to satisfy reserve requirements. As a result, even though the design of the shortage system calls for banks to square off at the end of the day, with zero excess reserves, in practice the system has typically closed with a surplus of over R5 billion, with the excess funds held disproportionately by small banks, and remunerated at the lower standing facility deposit rate.

Tiered-floor systems, by contrast, are less reliant on the interbank market for redistributing liquidity. By saturating demand, they ensure an ample supply for all banks, avoiding the requirement to allocate a minimum amount with a high (and probably no longer obtainable) degree of efficiency. They can also absorb surpluses more efficiently, preventing the penalisation of banks that end the day with unwanted long positions.

A final consideration is that floor-style systems tend to be somewhat simpler to operate than other available frameworks, both for the central bank and for commercial banks. This is likely to reduce the resource demands on users, and also make the framework more resilient to shocks.

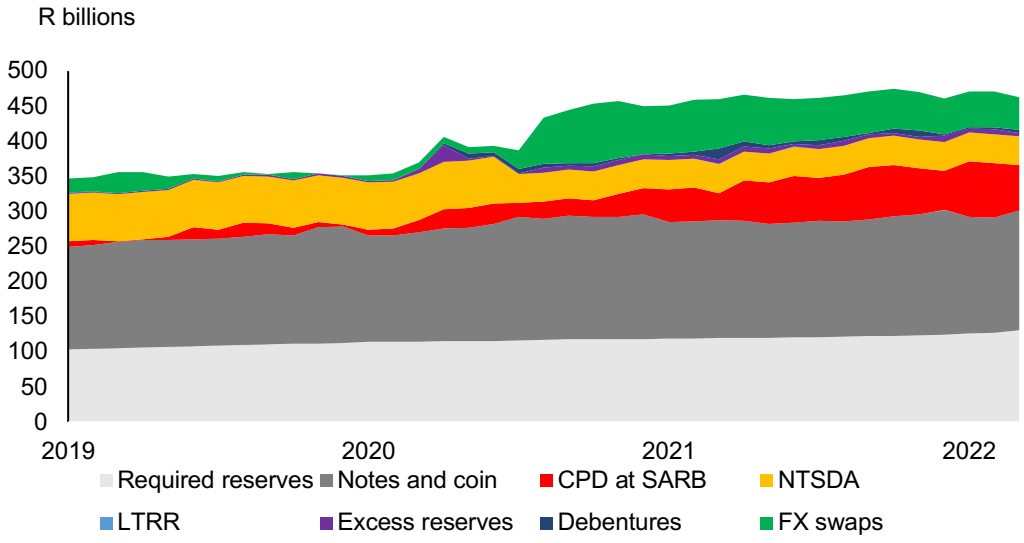
Outline of the new framework

Fundamentals of a tiered floor

The overall public response to the consultation paper proposal was supportive. The final framework therefore retains the core concept of a tiered-floor system, with an ample supply of reserves and deposit facilities where banks can earn interest on excess reserves, at the policy rate, but only up to certain limits.

To deliver these excess reserves, the SARB will unwind most of its existing liquidity-draining operations. This will convert the current SARB liabilities, issued to create a money market shortage, into excess reserves. The main liabilities that will be converted are FX swaps and CPD call deposits with the SARB. The SARB also has a small stock of debentures that will be matured. As the liquidity injections will come from maturing existing liabilities, the SARB's overall balance sheet will not expand materially[4] during the transition to the new MPIF. Instead, existing liquidity-draining liabilities will be converted into excess reserves.

Graph 2: Selected SARB liabilities



[4] Given repo offerings that will partially fill quotas in addition to offsetting transitional shortages, the total size of the balance sheet might change marginally

Quotas (tiers)

An important feature of the new framework is quotas or tiers, which will cap the amounts of excess reserves on which banks can earn the policy rate. Balances above banks' quotas will earn a lower rate, of repo *minus* 100 basis points, in line with the existing Standing Deposit Facility rate.

The quota aspect of the new MPIF adds complexity to the framework but will encourage banks to lend out some of their excess funds in the interbank market. By contrast, in a pure-floor framework, banks with excess reserves tend to deposit them entirely at the central bank. This can lead other banks to run short of reserves despite a surplus in the system. In turn, this creates upward pressure on interest rates and obliges the central bank to inject more liquidity to return rates to the floor – the 'ratchet' effect observed in some jurisdictions operating pure-floor systems.[5] Quotas will help protect the SARB from having to steadily expand its balance sheet to maintain interest rate control.

Quotas will be based on the rules outlined below.

First, the SARB will establish the underlying surplus of reserves that it wishes to place with banks. This will be known as the liquidity target. It is, in some respects, the mirror image of the shortage target under the classical cash reserve MPIF, being a positive rather than a negative quantity of reserves, with that amount being deposited back at the SARB rather than being lent out by the SARB. The SARB will have discretion to adjust the liquidty target as needed.

Second, the liquidity target will be augmented with a shock buffer to absorb movements in notes and coin, cash reserve requirements, CPD funds and other exogenous factors which can change the supply of liquidity in the market. Based on historical evidence, a shock buffer of R10 billion would absorb over 99% of daily liquidity shocks. This would allow the system to function without the daily fine-tuning by the SARB. The shock buffer would be revised over time, if necessary. The SARB will also retain the existing supplementary facilities, which will provide a tool for managing liquidity shocks over and above the shock buffers in quotas. These

[5] B Nelson, 'The Fed is stuck on the floor: here's how it can get up', 11 January 2022, available at https://bpi.com/the-fed-is-stuck-on-the-floor-heres-how-it-can-get-up/

facilities give the SARB discretion to borrow or lend funds, at the policy rate, at the end of the day.

Third, the *sum* of the liquidity target and the shock buffer (e.g. R60 billion if the liquidity target is R50 billion and the shock buffer is R10 billion) will be divided between banks. Banks' individual shares of this amount will be determined by their relative size. To quantify shares, the SARB will use the average of banks' liabilities over the most recent three months, as reported in the BA 900 forms.[6] These shares will be updated regularly, typically every six months. Biannual updates will keep the system adequately aligned with any changes in banks' relative sizes, while the three-month averaging of liabilities will smooth out volatility without making the system too backward-looking.

Fourth, each individual bank quota will be rounded up to a whole number. Large banks, with 10% or more of total bank liabilities, will be rounded up to the nearest R1 billion. Medium banks, with 0.2% to 10% of liabilities, will be rounded up to the nearest R500 million. Small banks, above 0% but below 0.2%, will be rounded up to the nearest R200 million. Inactive banks, with no liabilities, will receive no quota. These rules tend to provide smaller banks with larger quotas than they would receive purely based on their shares of total liabilities. This will simplify liquidity management for smaller institutions.

With quotas based on the liquidity target, supplemented by shock buffers and backstopped by supplementary facilities, the system will never force banks *systematically* into the standing facility. Wherever a bank or banks are over their quotas, there will be quota space available elsewhere in the system, and if there is not then a supplementary auction will be offered. This will protect interest rate control.

If a bank became active again, or if a new bank began operating, it would be appropriate to immediately assign a quota to that bank rather than delay until the next reweighting exercise. Given the rounding-up rules, it would be viable to assign a quota outright, without revising other banks' quotas down. Most banks would start small and would therefore qualify for a R200 million quota. In the rare case where a medium or large bank becomes a participant of the South African Multiple Option Settlement (SAMOS) system, it would be appropriate to

[6] The BA 900 forms provide the SARB with statistical information on banks' balance sheets. The data are published on the SARB's website. See https://www.resbank.co.za/en/home/publications/publication-detail-pages/forms/ba900/2018/107

reweight the quotas, as the entry of a sufficiently large institution could change the quotas for other banks. As an interim measure, a new medium or large bank would be assigned the minimum quota for its group (R500 million for a medium bank or R1 billion for a large bank).

To ensure transparency, quotas will be published on the SARB website, along with the principles used to derive them. This information will be updated as necessary. An example table is included as an appendix to this document, showing scenarios for a R50 billion and a R100 billion liquidity target.

Repo auctions

Repo auctions, where the SARB lends funds for short periods against the security of eligible collateral, will be less important under the new MPIF. This is because the system will be in surplus and banks will therefore not be forced to borrow from the SARB. These auctions will nonetheless remain in the toolkit. They are an important tool for providing additional liquidity, if needed, over time, should banks' demand for reserves exceed the amount supplied by the SARB as a by-product of its independent balance sheet choices. It will also be helpful, particularly during financial crises, to have a well-established facility where banks can access liquidity at their discretion.

The consultation paper proposed a system of full-allotment, fixed-rate auctions priced at the policy rate. However, the consultation period demonstrated clear downsides to this format. By making unlimited funds available at the policy rate, subject only to quota and collateral limits, the SARB would risk becoming a lender of *first* rather than *last* resort. Banks might overfund at auctions, forcing some institutions (especially the smaller banks) into the standing facility, with little relationship between banks that overfunded at auctions and banks that ended the day with surpluses. Unlimited repos could also weaken the functioning of the quota system, as banks in need of funds might prefer to borrow directly from the SARB rather than use the interbank market. This would leave the surplus banks (i.e. the banks with funds beyond their quotas) with no ready takers for their extra funds.

In the new MPIF, repo auctions will therefore continue to use a fixed-allotment, fixed-rate format. Each week, the SARB will announce a maximum offer amount. This amount will be capped to avoid any possible overfunding the system; it will also leave the shock buffer built into the quotas intact. Banks will have the option, but no obligation, to bid for these funds.

Given that the system will already be in surplus, many banks will not need extra liquidity and will likely not bid. Banks that do bid will receive funds at repo. In the event of an auction being oversubscribed, allocations will be pro-rated, as they are currently.

Fixed-rate, fixed-allotment auctions are relatively uncommon among central banks, with only one of these dimensions normally being fixed – either price or quantity. However, the existing format will be retained, to minimise the number of changes being made at one time and allow time to assess the new MPIF. If deemed necessary, the SARB may make amendments to the auction format in future.

Standing facilities

The SARB will retain standing facilities at 100 basis points above and below the repo rate. Banks that are short of reserves at the end of the day will therefore face a punitive borrowing rate, maintaining the existing incentive to satisfy reserve requirements without daily recourse to the SARB. Banks that hold reserves in excess of their quotas will similarly face a punitive deposit rate, which creates an incentive to lend these reserves to other banks instead. As quotas will always be larger than the actual supply of reserves, there will always be banks with quota space to absorb excess funds.

The standing facility margins will encourage banks to manage their liquidity to avoid shortfalls or excessive surpluses. Given the large quotas and an abundant supply of reserves, this will be easier for banks than it is under the shortage system.

There is no global consensus on the optimal width of standing facilities. The decision to retain a corridor a 100 basis points above and 100 basis points below repo is informed by two considerations. First, 100 basis points is a meaningful incentive, which may not be true of a smaller spread. In particular: if banks faced only a minor penalty on excess deposits, the quotas could become ineffective. Second, given no clear advantages of a different spread for the standing facilities, the SARB would prefer to retain the *status quo* as the simplest and most familiar option. It will, of course, be possible to revise the standing facility rates in future, if needed.

Supplementary auctions

At present, the SARB offers daily supplementary repos and reverse repos when the market is long or short respectively. Supplementary measures are only provided to offset exogenous shocks. These include changes in the autonomous factors, as well as any large fluctuations in the end-of-day liquidity position due to CPD depositor activity. No supplementary auctions are conducted where the market is unbalanced because of over- or under-funding at repo auctions; this tool is not used to compensate for bank-initiated errors. The supplementary facilities are provided at the end of the day.

In the new MPIF, supplementary facilities will remain in the SARB's toolkit. They will be activated only when the total supply of liquidity in the system deviates from the liquidity target by an amount greater than the shock buffer built into the quotas (R10 billion). Specifically, a supplementary repo will be offered when liquidity falls more than R10 billion below the liquidity target, and a supplementary reverse repo will be offered when liquidity is more than R10 billion above the liquidity target. The system is designed to absorb almost all the liquidity shocks within the existing quotas, so the supplementary facilities serve exclusively to protect the system from tail-risk events.

The supplementary offerings reflect the marginal amount of liquidity beyond the shock buffer. For instance: if the liquidity target were R50 billion, with a R10 billion shock buffer, and if actual liquidity were R61 billion at the end of a given day, the supplementary reverse repo would be R1 billion, to bring actual liquidity back within the R50 billion *plus* or *minus* the R10 billion target. Similarly, if actual liquidity were R39 billion, the supplementary repo would be R1 billion, once again bringing actual liquidity to within R10 billion of the liquidity target. Supplementary repos and reverse repos expire on the next business day.

Operational aspects of the new framework

Monitoring transmission

The new MPIF uses a fairly simple theory of monetary policy transmission. Policymakers set an interest rate which represents the return on a maximally safe and liquid asset: a rand deposit held overnight at the SARB (and, in fact, within the national payment system itself).

This price then pins down the short end of the yield curve. Assets further out on the yield curve will have yields related to this rate, but with mark-ups to reflect differences in term or risk premiums as well as short-rate expectations. These components are market determined.

Links between the repo rate set by the SARB's MPC and other asset prices are enforced by an arbitrage condition. In floor-style systems, banks hold excess reserves and are free to use them to purchase other assets. Where other assets are mispriced relative to the returns on bank reserves, banks will rationally either sell reserves to acquire the mispriced assets or sell the assets to get reserves. Given that the price of bank reserves is fixed by the MPC, and that these reserves represent the fundamental unit of account and means of exchange for the economy, other prices then have to correct to this policy rate.

To monitor transmission, the SARB will not rely on a single market rate. It will instead consider a range of rates, including the new benchmarks to be introduced under the Reference Rate Reform project. This is consistent with the 'pluralist' monitoring arrangements described in the consultation paper.

It is important to note that this approach will be resilient to shifts in interbank behaviour, specifically towards more secured interbank lending. The consultation paper proposed focusing on the South African Rand Interbank Overnight Rate (ZARIBOR), which is an unsecured interbank rate, as the primary longer-run benchmark for monetary policy. However, it is plausible that, in the longer run, interbank lending will be largely secured.

Liquidity management

Floor-style systems work by saturating banks' demand for reserves. However, this demand can evolve in unpredictable ways. A central bank operating a floor-style system needs to constantly assess demand, and it requires a toolkit to manage that demand.

The SARB will have a battery of indicators for assessing demand. As discussed above, it will be able to monitor a range of interest rates for deviations from the policy rate. Ongoing market intelligence will provide further indications of demand pressures. In addition, bid volumes at repo auctions will provide direct evidence of demand for reserves.

In the early years of the new MPIF, the SARB will have scope to expand liquidity by approximately R100 billion, without expanding its overall balance sheet. In the context of required reserves of around R125 billion, this will likely fully saturate banks' demand. The problem of ensuring ample liquidity is therefore more likely a longer-term challenge.

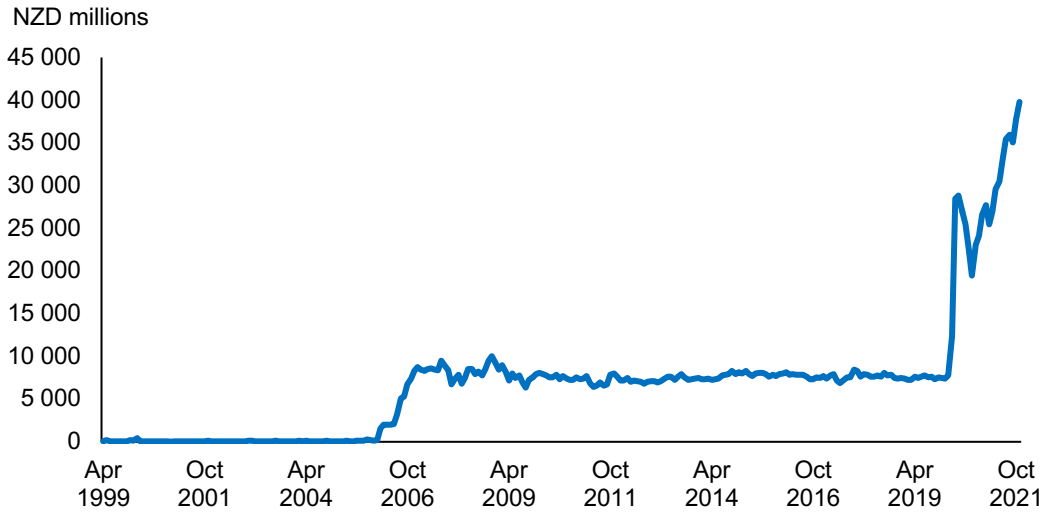
To manage these dynamics, the new framework will rely on a passive measure (i.e. quotas) to dampen demand, as well as on active measures (i.e. liquidity-providing operations) to satisfy demand.

In Norway and New Zealand, the two countries where central banks have operated tiered-floor systems, quotas have been effective at stabilising demand for reserves over extended periods of time. In Norway, they were introduced in 2011 to modify a pure-floor system in force since the 1990s. Quotas rapidly reduced demand, such that the system was able to function effectively with reserves of approximately NOK33 billion, from about NOK60 billion immediately prior to the reform.[7] Reserve demand has been stable at around those levels ever since.

In New Zealand, tiers were added in 2007, modifying the pure-floor system introduced in 2006. Following some volatility around the global financial crisis, demand stabilised at around NZD7.5 billion, close to the NZD7 billion originally expected by the Reserve Bank of New Zealand and materially below the levels of around NZD9 billion reached before the introduction of tiers. These levels were sustained until the onset of COVID-19 and the introduction of quantitative easing in New Zealand, which expanded the supply of reserves and led to the reintroduction of a pure floor.

[7] Norges Bank 'Banks' assessment of Norges Bank's liquidity management system', *Norges Bank Papers* No. 4, 2014, available at: https://www.norges-bank.no/en/news-events/news-publications/Reports/Norges-Bank-Papers/2014/42014/

Graph 3: New Zealand – Average settlement cash



In the new SARB framework, quotas are expected to have the same demand-dampening effect. They could even be used to reduce reserve demand, if needed, as was the case in Norway. Nonetheless, given the relatively high level of gross domestic product (GDP) growth, it is unlikely that reserves will remain adequate at fixed nominal levels for an extended period. It is therefore necessary for the SARB to have longer-term tools to provide additional liquidity so that the market remains saturated.

The fact that South Africa has had a structural surplus of reserves since the 2000s reveals a preference by the SARB to operate with a larger balance sheet than could be funded purely by autonomous factors (notes and coin *plus* required reserves). This pattern is largely explained by FX reserve purchases. If this historical pattern persists, it will provide additional liquidity to the market. Such purchases will not be required by the new MPIF, but if they occur, they will help meet any increase in reserve demand, forestalling additional operations to supply liquidity.

If more liquidity is required than the SARB has independently chosen to provide through other balance sheet policies, this will be delivered primarily through repo auctions. Where demand has outgrown quotas, quotas will be raised and repo offerings will be expanded to satisfy the additional demand. Repo lending has several advantages as a means for injecting further liquidity. It is effectively cost-neutral, as funds are lent at repo while excess reserves are remunerated at or below repo. It is relatively easy to withdraw this liquidity if the demand shift

is temporary, as repo loans mature weekly and banks have to actively bid for funds again if they still have demand for them. This contrasts with outright asset purchases which oblige the central bank to make policy choices to taper or tighten, which can be disruptive for markets. Repo loans are also a long-standing component of the SARB's toolkit.

This reliance on repo loans contrasts with open-market transactions in sovereign debt, a long-standing tool of central banks to regulate the supply of bank reserves. Such operations have advantages. Given that yield curves are normally upward-sloping, they tend to be profitable for the central bank. They also match a longer-term public demand for an asset provided by the public sector (bank reserves) with a longer-term public sector liability (sovereign debt), contributing to a well-designed public sector balance sheet. However, bond purchase operations can create misconceptions of government debt monetisation, potentially diluting central bank credibility. The SARB will therefore not rely on adjusting its bond purchase portfolio as a standard tool for managing liquidity so as to deliver on the MPC's repo rate target. The SARB will continue to operate in the bond market only if deemed necessary, during periods of market dysfunction, for financial stability rather than monetary policy implementation reasons.

Toolkit for draining excess reserves

With the shortage system, the SARB used a range of tools to drain liquidity from the market. This toolkit was updated in August 2020. It included long-term reserve repos (LTRRs) offered at variable rates capped at repo *plus* 100 basis points, weekly debentures offered at variable rates capped at repo *plus* 100 basis points, short-term buy-/sell-backs conducted on a bilateral basis with commercial banks' repo desks, as well as outright sales and purchases of government bonds in the secondary market. Of these tools, the SARB only uses LTRRs and debentures actively, with the former attracting little to no demand. Under the new MPIF, these tools will no longer be relevant and will be discontinued. However, in the event of a need to utilise these tools in future, they can be reintroduced with relative ease.

Conclusion

Following an extensive consultation period, the SARB has finalised its new MPIF. The tiered floor framework will work with a *surplus* of bank reserves rather than a *shortage*. Banks will interact with the SARB primarily to make deposits rather than to undertake loans. These

deposits will generally be remunerated at the repo rate, although banks will be incentivised to on-lend some reserves through lower rates on deposits above given quotas. The reform of this framework represents a technical change and does not change the inflation target range or the monetary policy stance.

Appendix A

Bank quotas under two liquidity scenarios

Bank quotas Banks earn the repo rate overnight for excess reserves up to quotas. Reserve balances in excess of quotas earn repo *less* 1 percentage point. *All in R millions; updated to liability data available as of April 2022*				
	Total raw quota	**50 000**	**100 000**	
	With shock buffer	**60 000**	**110 000**	**Rounding principle**
Bank	**Share of liabilities**	**Bank quotas**	**Bank quotas**	
THE STANDARD BANK OF SA	24.4%	15 000	27 000	Large banks; > 10% of total liabilities; rounded off to the nearest R1 billion
FIRSTRAND BANK	21.6%	13 000	24 000	
ABSA BANK	20.7%	13 000	23 000	
NEDBANK	16.6%	10 000	19 000	
INVESTEC BANK	7.7%	5 000	8 500	Medium banks; 0.2-10% of total liabilities; rounded off to the nearest R500 million
CAPITEC BANK	2.3%	1 500	3 000	
CITIBANK	1.3%	1 000	1 500	
HSBC BANK — JHB	1.0%	1 000	1 500	
JPMORGAN CHASE BANK — JHB	0.9%	1 000	1 500	
BANK OF CHINA — JHB	0.6%	500	1 000	
CHINA CONSTRUCTION BANK— JHB	0.5%	500	1 000	
STANDARD CHARTERED BANK	0.6%	500	1 000	
AFRICAN BANK	0.3%	500	500	
BNP PARIBAS SOUTH AFRICA	0.2%	500	500	
DISCOVERY BANK	0.2%	500	500	
GRINDROD BANK	0.2%	500	500	

	Total raw quota	50 000	100 000	
	With shock buffer	60 000	110 000	Rounding principle
Bank	**Raw share of liabilities**	**Bank quotas**	**Bank quotas**	
ACCESS BANK	0.1%	200	200	Small banks; < 0.2% of total liabilities; rounded off to the nearest R200 million
ALBARAKA BANK	0.1%	200	200	
BANK ZERO MUTUAL BANK	0.0%	200	200	
BIDVEST BANK	0.1%	200	200	
FINBOND MUTUAL BANK	0.0%	200	200	
HABIB OVERSEAS BANK	0.0%	200	200	
HBZ BANK	0.1%	200	200	
ICICI BANK	0.0%	200	200	
SASFIN BANK	0.1%	200	200	
STATE BANK OF INDIA	0.1%	200	200	
TYME BANK	0.0%	200	200	
UBANK	0.1%	200	200	
VBS MUTUAL BANK	0.0%	0	0	Inactive banks; 0% of total liabilities
Total quota	**100.0%**	**66 400**	**116 400**	

Abbreviations

BIS: Bank for International Settlements
CPD: Corporation for Public Deposits
FX: Foreign Exchange
GDP: Gross Domestic Product
GEC: Governor's Executive Committee
LTRR: Long Term Reverse Repo
MPC: Monetary Policy Committee
MPIF: Monetary Policy Implementation Framework
NT: National Treasury
NTSDA: National Treasury Sterilisation Deposit Account
repo (rate): repurchase rate
SAMOS (system): South African Multiple Options Settlement
SARB: South African Reserve Bank
ZARIBOR: South African Rand Interbank Overnight Rate